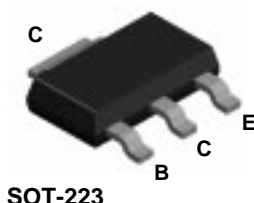


BCP54



NPN General Purpose Amplifier

This device is designed for general purpose medium power amplifiers and switching circuits requiring collector currents to 1.2 A. Sourced from Process 38.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	45	V
V _{CBO}	Collector-Base Voltage	45	V
V _{EBO}	Emitter-Base Voltage	5.0	V
I _C	Collector Current - Continuous	1.5	A
T _J , T _{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		BCP54	
P _D	Total Device Dissipation Derate above 25°C	1.5	W
		12	mW/°C
R _{θJA}	Thermal Resistance, Junction to Ambient	83.3	°C/W

NPN General Purpose Amplifier

(continued)

BCP54

Electrical Characteristics

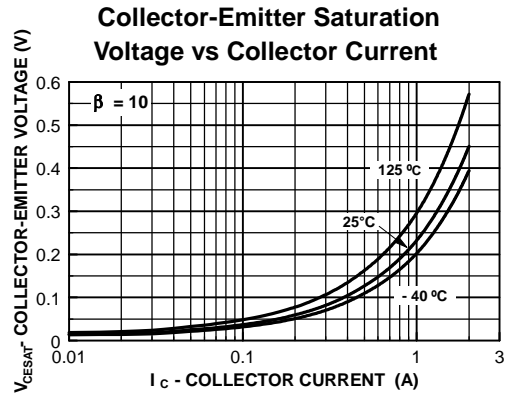
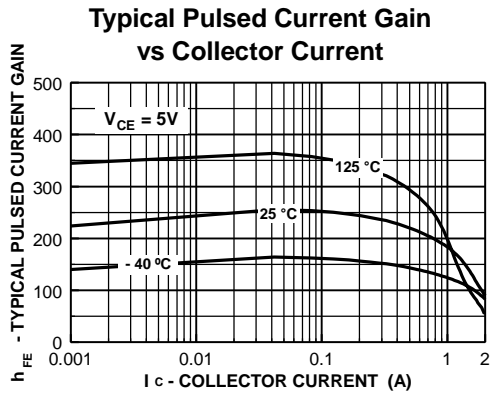
TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$	45		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \text{ } \mu\text{A}, I_E = 0$	45		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \text{ } \mu\text{A}, I_C = 0$	5.0		V
I_{CBO}	Collector-Cutoff Current	$V_{CB} = 30 \text{ V}, I_E = 0$ $V_{CB} = 30 \text{ V}, I_E = 0, T_A = 125^\circ\text{C}$		100 10	nA μA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 5.0 \text{ V}, I_C = 0$		10	μA

ON CHARACTERISTICS

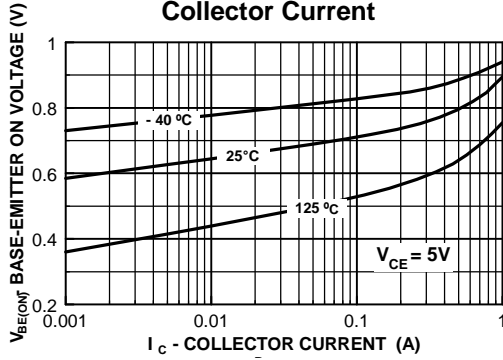
h_{FE}	DC Current Gain	$I_C = 5.0 \text{ mA}, V_{CE} = 2.0 \text{ V}$ $I_C = 150 \text{ mA}, V_{CE} = 2.0 \text{ V}$ $I_C = 500 \text{ mA}, V_{CE} = 2.0 \text{ V}$	25 40 25	250	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$		0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 500 \text{ mA}, V_{CE} = 2.0 \text{ V}$		1.0	V

Typical Characteristics

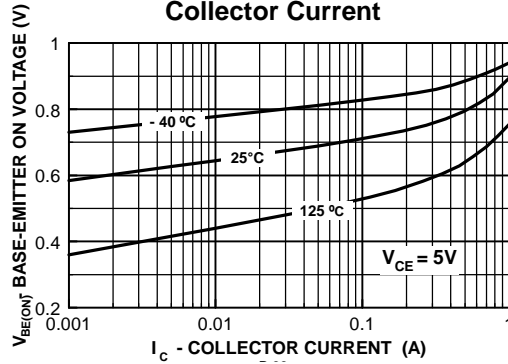


Typical Characteristics (continued)

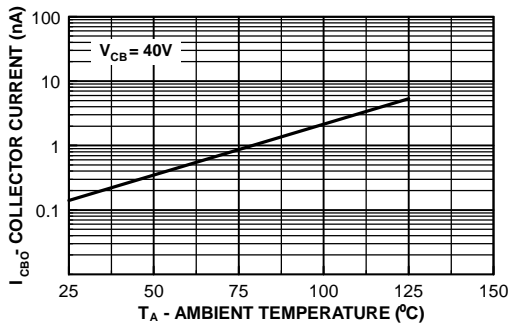
Base-Emitter ON Voltage vs Collector Current



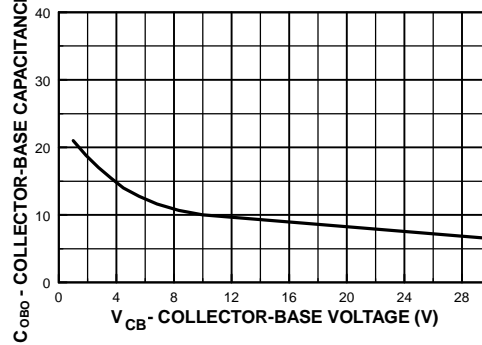
Base-Emitter ON Voltage vs Collector Current



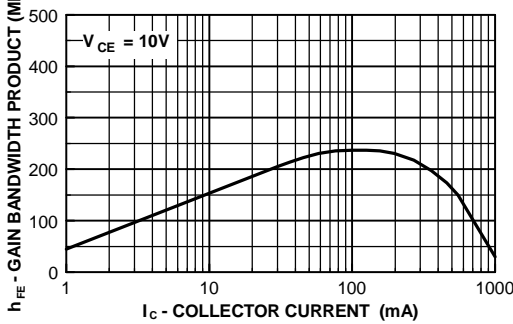
Collector-Cutoff Current vs Ambient Temperature



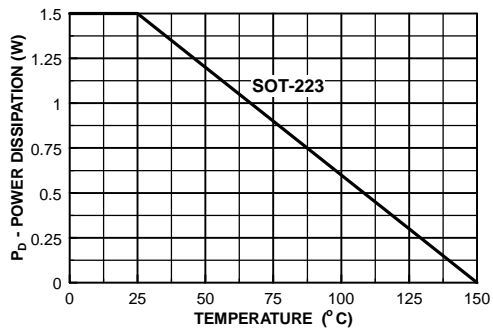
Collector-Base Capacitance vs Collector-Base Voltage



Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature



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Definition of Terms

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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